EUI WORKING PAPERS IN ECONOMICS

EUI Working Paper **ECO** No. 90/9

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EUROPEAN UNIVERSITY INSTITUTE, FLORENCE

ECONOMICS DEPARTMENT

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BADIA FIESOLANA, SAN DOMENICO (FI)

Printed in Italy in May 1990
European University Institute
Badia Fiesolana
– 50016 San Domenico (FI) –
Italy

UNEMPLOYMENT COMPENSATION AND LABOUR MARKET TRANSITIONS: A CRITICAL REVIEW*

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January, 1990

*The first version of this paper was prepared at the request of the OECD and presented to an expert meeting in Paris on unemployment compensation in January, 1988. We are grateful to Stephen Jenkins, Peter Jensen, Joan Payne, Dennis Snower and seminar participants in Melbourne and Canberra for helpful comments on a later version. The usual disclaimer applies. A revision of this paper was undertaken while Micklewright was a visitor in the Department of Economics at the University of Melbourne in 1989; he thanks the Department for its hospitality and facilities.

The figures for the 5 percent sample of unemployed benefit claimants in Britain quoted in Section 2 are based on results from a project carried out by Micklewright. We are grateful to the Nuffield Foundation for financial support and to Clare Evans for undertaking the calculations.

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ABSTRACT

The paper critically reviews the treatment of unemployment compensation in both theoretical and empirical models of labour market transitions. The paper has two themes. The first is the need to consider the effect of unemployment benefits on transitions other than those between employment and unemployment. The second is the importance of taking account of the institutional features of unemployment compensation schemes, in particular the distinction between contributory unemployment insurance (UI) and income-tested unemployment assistance (UA). The review of theory includes partial and general equilibrium job search models, contract models and efficiency wage and dual labour market theories. The treatment of unemployment compensation in theoretical models is frequently very crude, typically ignoring such features as contribution requirements for UI, means-testing under UA, and conditions regarding voluntary quitting, availability for work and search effort. Moreover, much of the literature deals with a two-state model, considering only movements between employment and unemployment. Empirical evidence from a number of OECD countries concerning the effect of unemployment compensation on a variety of labour market transitions is appraised, and the need for care when making international comparisons is stressed. In addition to surveying the effect of varying benefit levels, consideration is given to the impact of such features as benefit duration, administration, and method of finance. The richer view of unemployment compensation and the labour market taken in the paper allows some positive impacts on transitions to be identified, this applying particularly to UI as opposed to UA.

INTRODUCTION

The marked rise in unemployment in most OECD countries during the 1970s and 1980s has led to unemployment compensation being given by both academic economists and policy makers an attention it had not previously received in the post-war period. This attention has largely been critical. Economists have typically seen unemployment compensation as having a negative effect on the labour market, with high benefits causing the unemployed to be less willing to accept jobs and inducing those in employment to quit to become unemployed. Rises in unemployment and persistent differences in the levels of unemployment between countries are attributed, at least in part, to more generous levels of benefit payments, or to extended periods of entitlement.

The negative view of unemployment compensation has tended to lead to a polarisation of the policy choices, with adequacy of benefit levels being traded-off against their disincentive effect in increasing unemployment at the expense of employment. A government has - on this approach - to choose between cutting benefit and discouraging work. But this is a dangerous over-simplification for at least two reasons. To begin with, it assumes that policy is judged in terms solely of reducing unemployment and increasing employment. This takes a too limited view of the labour market. A central theme of the paper is that it is necessary to distinguish several different labour market states, and not just to consider employment and unemployment. People may leave the unemployment register but not take employment. They may leave the labour force or undertake full-time training or education. Employment cannot be regarded as homogeneous. A temporary job in the black economy is quite different from a career position with a large "blue chip" company. We begin therefore by providing in Section 1 a framework which allows for these features.

The second misleading feature of the trade-off view is that it mistakenly assumes that the impact of unemployment compensation can be summarised in terms of a single number. There is more to its operation than simply the level of benefit. We have also to take account of (among other aspects) the conditions which determine whether a person is unemployed and making efforts in good faith to find a job, including the

possibility of disqualification, the contribution conditions, the structure of benefit over time, the relationship between benefit and the income of other family members, and the financing of benefit schemes. The importance of the institutional features of unemployment compensation is the second principal theme of this paper. The *form* of unemployment benefit may have major implications for the predicted impact on employment, unemployment and wages. In particular, we must distinguish between unemployment *insurance* and unemployment *assistance*. These aspects are examined in Section 2, which reviews the theoretical treatment of unemployment compensation and some of the ways in which it affects labour market transitions, either directly or indirectly via changes in wages. We are especially concerned with the assumptions about how unemployment compensation operates and their implications for the conclusions drawn. We argue that, with some notable exceptions, theorists have paid little attention to how unemployment benefits actually work. In Section 3 we consider the empirical evidence concerning the effect of unemployment compensation on labour market transitions in the OECD area. We emphasise the need when interpreting the evidence to recognise that the unemployment compensation schemes actually in force in OECD countries may differ quite considerably, in particular with respect to the distinction between insurance and assistance.

Our review is of necessity selective in several important ways. First, a full discussion of the impact of unemployment compensation would need to consider its relationship to aspects of policy which we do not cover here, such as active measures to encourage employment or the impact of personal income taxation. Secondly, we do not seek to give an exhaustive account of the impact of unemployment compensation on the economy. Our emphasis is on the direct impact on labour market transitions. While we do consider the impact of unemployment compensation on wage setting in describing theoretical models, this does not feature in our account of the empirical evidence. We give no consideration to the impact of unemployment compensation on aggregate demand in its role as an automatic stabiliser. While we do emphasise some positive aspects of unemployment compensation, our aim is not to draw up a list of plus and minus points. Rather, it is to assess some of the theoretical arguments and empirical evidence on which such a list may be based.

Finally, in referring to theoretical and empirical studies we have made no attempt to be comprehensive; we try merely to highlight contributions which illustrate our ideas. Our selection also reflects the countries with which we are most familiar, and it cannot be stressed too strongly that findings for one country do not necessarily carry over to another with different history and institutions. This applies especially to the United States, which has the richest stock of empirical evidence, but whose labour market is different in crucial respects from that found in European countries, which differ in turn from Japan and other OECD countries. Within countries, too, labour market and other conditions change over time, and a more extended review of the evidence would need to account for the differences between, say, the 1970s and the 1980s.

1. LABOUR MARKET TRANSITIONS: A FRAMEWORK FOR ANALYSIS

i) In and out of the labour force

The effect of unemployment insurance is typically seen in terms of the disincentive it provides to leave unemployment for employment, encouraging workers to search longer or less intensively for new employment. Or it provides an encouragement to make the reverse transition by quitting employment to enter unemployment. These are important transitions and we discuss in Section 3 the quantitative evidence as to how they are affected by unemployment compensation. However, this represents only a partial picture. For example, the relaxation of eligibility criteria for unemployment benefits may lead persons not previously participating to join the labour force, while disqualification or exhaustion of benefit entitlement may lead to withdrawal from the labour force rather than employment. We need therefore to consider flows between inactivity and unemployment. Similarly, we need to recognise that in most countries a person on a government training scheme is classified neither as employed nor as unemployed. Moreover, an unemployed person taken off the register by a training scheme may not, as is hoped, move into employment, but may exit back into unemployment.

A pre-requisite for our analysis is a model of the labour market with more than the two states employment and unemployment. We are not of course the first to argue for this. In the US, the case has been put forcefully by Clark and Summers (1979, 1982, 1982a). Their emphasis is on flows to and from the state "out of the labour force" which may be thought of as encompassing several different situations, including full-time education or training, sickness, military service and retirement. Using data from the US Current Population Survey (CPS) for 1974, Clark and Summers argue that almost one half of all completed spells of unemployment ended in withdrawal from the labour force and not in employment (1979, pp.16 and 25). (Although see Abowd and Zellner, 1985, and Hogue and Flaim, 1986, for discussion of problems of measuring flows with CPS data).

The existence of sizeable flows to and from economic inactivity is a feature that can be seen in other OECD countries from data sources with

different definitions of the labour market states. Table 1 shows for eight OECD countries the labour market status in 1985 of persons in the unemployed stock 12 months previously. In seven of the eight countries, of those no longer unemployed a year later, more than one fifth were out of the labour force. (The exception is Italy). In Ireland and the UK the figure was over two fifths.

Table 1: Labour Force Status in 1985 of those Unemployed 12 Months Earlier

	Unemployment %	Employment %	Not in Labour Force %
Belgium	69	22	9
Denmark	37	49	14
France	54	29	17
Ireland	69	18	13
Italy (1983)	61	32	7
Netherlands	62	24	14
UK	51	29	20
US	26	49	25

Source: All except the US from OECD, 1987, Table 1.12, based on recall information in the Labour Force Surveys; the US figure from OECD, 1987, Table 6.9, based on the Current Population Survey re-interviews.

For those no longer unemployed, the labour force state in 1985 was not necessarily that entered from the 1984 spell of unemployment. Moreover, some of those unemployed in 1985 would have had left for employment but re-entered unemployment during the year. Nevertheless, the table suggests strongly that large numbers of spells of unemployment end in exit to inactivity rather than employment. We should note also that the figures refer to the length-biased samples provided by the unemployment stock and to the extent that exit to inactivity is more common from long spells the figures in the table may give an exaggerated picture of the flows into inactivity. We would also expect the pictures for men and women to be rather different. Having said this, evidence from several countries indicate that flows into inactivity are also a prominent feature of data referring to men only and of data referring to a random sample of outflows. A survey of some 14,000 men officially registered as unemployed in the UK in June 1976 found that only just over half of those who had left the

register six months later had entered employment (UK Department of Employment Gazette, June 1977, p.565). In Canada, Hasan and de Broucker show 44 per cent of completed spells of unemployment recorded in Canadian data for 1980 ending in withdrawal from the labour force and even for males aged 25-44 the figure is 28 per cent (1984, p.47). Cramer and Werner find that only 67 per cent of outflows from West German unemployment in September 1977 for males aged 25 and over was to work (including job creation schemes) (1984, Table 5c). French data for 1975-1980 show that over a 6 month period some 55 per cent of unemployed men left for employment but 12 per cent withdrew from the labour force (Barge and Salais, 1984, Figure 9a).

The figures in Table 1 and those in the text relate to the transition from unemployment to inactivity, but the transitions *out of* inactivity are also important. Clark and Summers found that over two-thirds of persons entering employment in a given month were out of the labour force in the preceding month (1979, pp.16 and 25). Figures for eight European Community countries show that, of those in a permanent job in 1985 who had not been in employment a year earlier, more than half had been "not in the labour force" rather than "unemployed" (OECD, 1987, Table 1.11, based on recall information in the Labour Force Surveys).

The state "out of the labour force" covers, as noted above, a wide range of conditions and this has important implications for any discussion of labour market policy. As Clark and Summers admit, their results based on CPS data are strongly affected by the definitions of unemployment and "out of the labour force" used in the survey, these not precluding the classification of a person as inactive who was receiving unemployment benefit. We may distinguish between a definition of unemployment based on administrative considerations, such as the claiming or receipt of unemployment benefit, and one based on individual perception of circumstances or behaviour, such as a minimum level of job search activity. The 1982 ILO Guidelines for unemployment statistics, now used by the OECD, relate to the latter. However, in the UK, at least, the official measure of unemployment is based on the former. The implications of the distinction are illustrated by the fact that in the UK in 1987, although the total number of unemployed on the two definitions *were* quite similar, only 69 per

cent of those classified as unemployed according to the benefit definition were so classified according to the ILO/OECD definition (Department of Employment, 1988). On the one hand, there are those in receipt of benefit who are not regarded as actively seeking work, and, on the other hand, there are those actively seeking work who are not eligible for or not claiming benefit.

Transitions out of unemployment defined on one basis may not occur on the other. A marked rise in the generosity of benefits might lead some persons registered as unemployed to stop searching for a job. On the other hand, the converse is also possible, where for example the eligibility conditions for benefits are changed. In this instance government policy may result in flows between two states on an official definition without having any genuine impact on individual behaviour. This may be one reason for the flows between "out of the labour force" and unemployment. The West German evidence of Cramer and Werner (1982) for males aged 24 and over shows that, for those where the previous labour market state was known, more than a third of those entering unemployment had not at that previous date been in work (including job creation schemes). In a British study, Heady and Smyth (1989) found that for 30 per cent of a sample of family heads aged 20-59 with a registered unemployment spell of at least 3 months in 1983, employment was not the most recent classifiable pre-registration labour force state. In the US, Flinn and Heckman (1983) investigated whether the two states of "not in the labour force" and "unemployment" were behaviourally distinct, the test being whether the exit probabilities to employment from the two states were determined in different ways. They concluded that this was the case, although the small size and special nature of their sample should be noted.

Within the "not in the labour force" group, there are a variety of different situations, including those who are sick, those caring for children and other dependants, those engaged in other unpaid work, those who are retired, and those in education. It seems particularly important from the point of view of labour market policy to treat separately those situations where the person is in full-time training or education. The special employment measures which have accompanied the rises in unemployment in the 1970s and 1980s have certainly increased the flows

into, and overall importance of, government sponsored training as a labour market state. A dramatic example is provided by the youth labour market in the UK. In 1979, 11 per cent of 16 year old school-leavers were on the government's Youth Opportunities Programme; in January 1982 this figure was 26 per cent while by January 1987 exactly half of all 16 year-old leavers were participating in its successor, the Youth Training Scheme (Central Statistica Office 1982, 1985). Edin (1989) draws attention to government schemes in Sweden and reports that in the late 1970s "almost 4% of the labour force was engaged in various labour market programs at a time when open unemployment was slightly more than 2%" (p.20). Details of the numbers involved in Sweden are given in Standing (1988, Tables 9 and 10).

ii) Regular and marginal employment

The above discussion suggests that we might view the labour market as being comprised of four states: employment, unemployment, training/education, and inactivity (which may include unpaid work). As we have stressed, each of these states may cover a range of different situations, and the classifications should be regarded as no more than a convenient analytical simplification. In the case of employment, however, it would in our view be wrong to treat this as a homogeneous state even as a simplification, and in particular we should distinguish between what we call "regular" and what we call "marginal" jobs. Regular jobs have the expectation of lengthy employment, are covered by statutory employment protection, and are part of the legal economy. They may also offer some prospect of promotion and may involve a substantial element of general or specific training. Marginal jobs lack one or more of these attributes. They may be temporary; they may be part of the black economy; they may be "dead-end" jobs.

There are reasons to suppose that the past decade has seen a rise in jobs having "marginal" attributes. In the UK, the situation has been described by Dahrendorf as follows:

> "Significant numbers find themselves at the margin. ... If 'decasualization', that is the permanent employment of hitherto casual labour, was one of Beveridge's prescriptions against unemployment before the First World War, one observes a certain 'recasualization' today. This is not always involuntary, but it leaves a sense of jeopardy" (1988, p 150).

In the United States, Katz and Summers have referred to

> "Evidence suggesting that the bulk of employment growth in the United States has ocurred in sectors that are thought to provide 'low wage, bad jobs' rather than in sectors that provide 'high wage, good jobs'" (1989, p 209).

Taking a low-wage cut-off of 50 per cent of median earnings in 1973, Bluestone and Harrison (1988) found that the share of low wage employment expanded rapidly between 1979 and 1986 and that this could not be explained by purely cyclical factors. The growth of marginal jobs may be a by-product of measures to increase labour market "flexibility". Emerson (1988) has noted the change between the 1970s and the 1980s with regard to legislation concerning short-term contract labour:

> "The 1970s saw in Europe widespread legislation making these regulations more comprehensive or restrictive. The France government's legislation of 1982 appears to be the last example of the period of tightening regulations. Since then several countries have opened wider opportunities for fixed-term contracts as a way of easing the burden of severe restraints or dismissals." (1988, p 797).

That this applies also to France is illustrated by the observation in the OECD Employment Outlook that in that country

> "Contracts of limited duration are a particular legal form allowing employers to circumvent some of the provisions of employment protection legislation. These latter forms of employment are now numerically more important than agency or temporary work, following rapid growth in recent years" (OECD, 1989, p 181).

Our distinction between regular and marginal jobs is similar to that between primary sector and secondary sector in the dual labour market theory of Doeringer and Piore (1971). Jobs in the primary sector are characterised by employment stability and promotion from within (an "internal" labour market). Jobs in the secondary sector involve low job stability, little training, and poor promotion opportunities. The primary sector is typified by large manufacturing establishments and the secondary sector by small service sector firms. However, the nature of employment does not necessarily follow sectoral or firm lines: the same firm may offer both regular and marginal jobs. A management trainee-ship with a major

retailer is a regular job; part-time work in the same firm as Father Christmas paid in cash is a marginal job. For this reason, we prefer our own terminology, referring to *jobs* rather than *sectors*, although we discuss in Section 2 the dual labour market theories. In the US there has been a debate about 'bad jobs, good jobs' as in the earlier reference to Katz and Summers (see too Loveman and Tilly, 1988 and 1988a and Esping-Andersen, 1990, who also considers West Germany and Sweden). But we deliberately avoid such a terminology since we do not wish to make such judgements about the valuation of job attributes. There may well be workers who prefer the characteristics of a maginal job to regular employment.

In the present context, an important difference between regular and marginal jobs is that the latter are less likely to be covered by unemployment insurance. The contributions conditions for unemployment insurance in many countries require a substantial spell of employment within a given period. For example, workers with recurrent periods of unemployment in the UK are less likely to qualify for benefit on account of the rules which link spells of receipt separated by only short periods of work. Black economy jobs paid in cash will not result in any unemployment insurance contributions being paid.

We distinguish between regular and marginal jobs not only because of their different implications for the future benefit status of the person concerned but also because the pattern of transitions is likely to be different. In the case of duration of job tenure, for example, Stern (1989, Table 6.2) reports a monthly unemployment inflow rate for men in the UK in Autumn 1978 of 5.8 per cent from jobs of less than a year in length compared with 0.9 per cent for jobs of 1-3 years and 0.2 per cent for jobs of over 10 years. This has a number of explanations, but reflects in part the fact that some jobs are short-term by nature; using the same data, Wood (1982, Table 37) records a fifth of the male inflow reporting that the reason for their entering unemployment was that their previous job was only temporary.

Evidence also suggests that substantial numbers of moves out of unemployment are to temporary jobs, the figures being disproportionately large when viewed in relation to the size of the total temporary job pool

(OECD, 1987, p.40). Of those previously unemployed persons shown as in employment in Table 1 above, between one-fifth and two-fifths in each European country had temporary jobs. (The definition of a temporary job clearly needs to be treated with care, this not necessarily precluding employment available on an indefinite basis in which a survey respondent expresses the intention to stay for only a limited period.) The size of the outflows from unemployment to temporary jobs reflects in part the existence of labour market programmes providing or subsidising temporary work.

We can also draw on evidence on the recurrence of unemployment to show that exits from unemployment are quite frequently made to a state (work or otherwise) that is temporary. For example, in 1983 the proportion of persons experiencing unemployment who had more than one spell during the year was 21 percent in Australia, 24 per cent in Sweden and 32 per cent in the US (OECD, 1985, Table 37). The proportion of all time in unemployment accounted for by multiple spells in these three countries was 21 per cent, 29 per cent and 39 per cent respectively. Again, this evidence is consistent with jobs being of a temporary nature due to the supply side of the market as well as the demand side, but amongst the unemployed in the spring of 1985 in Great Britain, twice as many men gave the ending of a temporary job as the main reason for entering unemployment as reported voluntary quitting. For single and married women the ratios were 3:2 and 1:1 respectively (OPCS, 1987, Table 4.19). Taking all the unemployed, the ending of temporary employment was cited by 20 per cent of those who had left a job within the last three years.

We have been discussing the flows, in both directions, between unemployment and marginal jobs, but an important question is whether marginal jobs provide a stepping stone to regular jobs. Are marginal jobs a "dead-end" or a "way-station" (Esping-Andersen, 1990)? In a number of the recent dual labour market models it is assumed that entry to regular jobs (in our terminology) can only take place from unemployment or that the probability of employment in a regular job is less for people holding marginal jobs. For example McDonald and Solow (1985), argue that

> "secondary employment may be regarded as a kind of stigma that bars access to the primary sector. To the extent that secondary

> workers are regarded by primary market employers as 'inferior' or 'unreliable', some gesture of separation from the secondary market may increase the chance of being offered a primary-sector job" (1985, p 1124-5).

Unemployment in this model may therefore be seen as 'wait' unemployment, not dissimilar from the time spent searching in a standard search model. The fact that many of those newly hired by employers come directly from other jobs has been advanced as a criticism of the latter model and it might be seen too as undermining the dual labour market version. A significant proportion of employees are engaged in job search and this proportion is higher for those in temporary jobs: in the UK according to Pissarides and Wadsworth (1988), 5 per cent of male employees were engaged in search in 1984 and this rises to 34 per cent for those in temporary jobs. However, this does not tell us whether these people found regular jobs, and evidence is needed on the actual flows between marginal jobs and regular jobs before we can assess the validity of the assumption underlying the wait unemployment model that there is a lower (or zero) probability of making this transition.

A rather different classification of the outflows from unemployment to employment would be to distinguish between a new job and return to the last employer. This is an important distinction from both the demand side as well as the supply side of the labour market. Employers may, via layoffs followed by recalls, use the unemployment benefit system as a way of seeing them through temporary falls in demand. An unemployed worker who expects to be recalled may have little incentive to search for another job and thus react differently to changes in unemployment benefits.

Temporary layoff unemployment is a prominent feature of the US economy and it has been argued that it accounts for more than half of all unemployment (e.g. Feldstein, 1976). In Canada, Robertson (1989) notes that half of all recipients of unemployment insurance (UI) in 1984 returned to their pre-unemployment employer. He estimates that about a quarter of all weeks of unemployment (including those not covered by UI) were spent in spells starting with a layoff and ending with recall. Osberg et al. (1986) also highlight the prevalence of recall in Canada but note that it is much less common in the service sector. The same is reported in the United

States by Katz and Meyer (1988), who show that the rate of recall is 64 per cent of all job losers in manufacturing but only 35 per cent for service sector workers. To the extent that what we have called marginal jobs are centered in the service sector, it may be that temporary layoffs are more a feature of regular employment. Jensen and Westergard-Nielsen (1989) note the importance of layoff unemployment in Denmark where they estimate that at least 40 percent of unemployment spells during 1979-84 were due to temporary layoffs and that these spells accounted for at least 16 per cent of all unemployment in that period. However, in general this form of unemployment is much less common in Europe and other OECD countries than in the US (Fitzroy and Hart, 1985). Even in the US, a significant minority of those on temporary layoff are not in fact rehired by their previous employer and this underlines the importance of distinguishing between recall expectations and actual outcomes (Katz, 1986, Katz and Meyer, 1988).

iii) Labour market transitions: a summary

The view of the labour market described above may be summarised in the terms of a 5 x 5 transition matrix between the states of:

- unemployment
- regular employment
- marginal employment
- not in the labour force
- training and education

Whereas it is the transitions between employment and unemployment which have been the principal focus of much of the literature on the effects of unemployment compensation, we have argued that it is important to distinguish regular from marginal employment. Is the effect of retrenchment in unemployment compensation to increase the outflow from unemployment to regular jobs or is it an increase in marginal employment which is induced? We have drawn attention to studies which show the significance of "not in the labour force". Are the effects of cuts in unemployment benefit to increase the rate of exit from unemployment, not into employment, but out of the labour force? Does the existence of unemployment insurance lead to people registering as unemployed rather than leaving the labour force? Does unemployment compensation provide the

security which allows people to give up their jobs and acquire training?

As hardly needs stressing, the representation is over-simplified and there are important aspects - such as the role of self-employment - that we shall not be considering. Moreover, we are treating the states as exclusive, whereas a person may be in part-time employment, for example, at the same time as being in training or education. A person may - legally or illegally - be in paid work at the same time as registering as unemployed. Finally, we have noted the differences in definition of the labour market states, and in particular that unemployment may be defined in administrative or behavioural terms. It should also be obvious that there are important life-cycle aspects. The transitions to and from training are likely to be particularly important for those in the younger age groups; the transition from not in the labour force applies to women returning after they have had children; retirement may take the form of moving from regular employment to marginal employment, or unemployment, before leaving the labour force.

2. UNEMPLOYMENT COMPENSATION IN THEORY

i) Unemployment compensation in theory and practice

Beginning their review of different explanations of the natural rate of unemployment, Johnson and Layard observe that in a simple market-clearing demand and supply model of the labour market, unemployment benefit increases the level of unemployment and note that this effect is "as in all our models" (1986, p.923). If one looks at the models in question, one finds that the unemployment benefit with which they are concerned is of the following 'hypothetical' form:

(a) the benefit is paid irrespective of the reasons for entry into unemployment,
(b) it is paid independently of the person's efforts to search for new employment, or of his or her availability for work,
(c) there is no penalty to the refusal of job offers,
(d) there are no contribution conditions related to past employment record,
(e) the benefit is paid at a flat rate,
(f) benefit is paid for an unlimited duration,
(g) eligibility for benefit is not affected by the level of income of other household members.

In other words, it is quite unlike any real-world system of unemployment compensation. In this mis-representation, Layard and Johnson are not alone; with some notable exceptions - which we discuss below - the theoretical literature on unemployment benefit largely ignores important institutional features of actual social security schemes. Unemployment compensation is often treated as if it were simply the wage of the unemployed, as illustrated by such assumptions as "the wage income when working is w, and is b when not working" (Oswald, 1986, p 369).

As we have noted in the Introduction, it is important to distinguish between unemployment *insurance* (UI) and unemployment *assistance* (UA). We start with UI. It is true that this can be approximated by some of the features set out above. In that UI is typically on an individual basis, it

does not depend on the income received by other household members, so that condition (g) is satisfied. (An exception is where dependant's additions are conditional on the dependant not receiving income in excess of a specified amount, as in the UK where the unemployment insurance addition for a dependant wife is paid only where she earns less than this amount - see Atkinson and Micklewright, 1985, Chapter 2). But the remaining (a) to (f) are typically replaced by conditions like the following:

(a') benefit is refused where a person has entered unemployment voluntarily or as a result of industrial misconduct,

(b') benefit is conditional on the person making demonstrable efforts to search for new employment, and on being available for work; this often requires registration at a state employment agency,

(c') refusal of suitable job offers, beyond some specified number, leads to disqualification for benefit,

(d') the benefit is contributory, with contributions typically being paid by employers (possibly on an experience-related basis) and employees according to a schedule which is related to earnings, and there being contribution conditions for UI benefit with eligibility depending on past record of insured employment,

(e') the amount of benefit received while unemployed may depend on past earnings,

(f') UI benefit is paid for a limited duration, and the rate of benefit may decline over time.

These conditions, coupled with (g), may be taken to describe the general form of UI. In setting out these features, we have not described the UI system of any one particular country but have attempted to summarise features representative of those found in the 21 OECD members that have such schemes (the exceptions being Australia, New Zealand and Turkey). The actual details of UI schemes do of course differ considerably across countries. (A valuable, if now dated, survey of unemployment insurance schemes is provided by Blaustein and Craig, 1977. See also CERC, 1983.)

Unemployment assistance (UA) differs from UI in several crucial respects, although again there is considerable diversity across countries. It shares with UI the conditions (a'), (b') and (c'), in that receipt is

typically conditional on not being liable for the unemployment, on seeking work, and on not refusing job offers. A recent example is the new *revenu minimum d'insertion* in France, where income support is linked to measures for 're-integration into society'. However, UA is by definition non-contributory, so that condition (d) of the hypothetical form does apply to UA. Similarly, in a number of countries, but not all, UA is paid without limit on duration (condition (f)). But the most important feature of UA is that it is subject to a test of means:

(e") the amount of UA benefit received depends on other income and on assets via a means-test,

and this test is typically applied either to the inner family (husband, wife and dependant children) or to the household as a whole, so that

(g") the amount of UA benefit is affected by the level of income and assets of other household members.

These aspects of UA mean that its impact on work incentives may be quite different from that of UI. Most importantly, it may impose a high effective marginal tax rate on the earnings of the partners of unemployed persons, since the UA is typically reduced if they have earnings (there may be a disregard provision but this is typically small). Equally, it may act to discourage savings, since capital enters the means test either via the income test or via a separate assets test.

To summarise, in what follows we take UI to be characterised by (a') to (f'), and (g), and UA to be characterised by (a') to (c'), (d), (e"), (f) and (g"). In relating these 'ideal types' to actual real-world schemes, we include under UA general schemes of assistance to which any individual on low income may be able to apply as well as means-tested benefit schemes specifically for the unemployed. In neither the UK nor the US is there a scheme of the latter type but the general assistance benefit, Income Support (previously Supplementary Benefit), plays the role of UA in Britain in a way that is not matched by assistance programmes in the US. Like the UI schemes, these vary considerably between states, only half of which, for example, paid assistance under the AFDC programme in 1982 to families with

an unemployed head (Williams et al, 1982, p.494). General assistance acts as a residual programme but does not provide a nationwide safety net for the unemployed. European countries have, in the main, substantially more extensive assistance benefit schemes for those not entitled to UI or who exhaust entitlement and this represents an important institutional difference between the US and many other OECD countries. West Germany, for example, has a three-tier system: an explicit UA programme (Arbeitslosenhilfe) alongside UI (Arbeitslosengeld) as well as a general assistance benefit (Sozialhilfe) for which the unemployed may apply.

Unemployment assistance programmes are the responsibility of the state, whether local or national, but unemployment insurance may be provided by private bodies, either employers or trade unions. In the United States, there are supplemental unemployment benefits paid by employers to workers on temporary layoff, negotiated as part of collective bargaining. Such employer benefits form part of the theory of implicit contracts with asymmetric information (Grossman and Hart, 1981), but their empirical relevance appears limited. According to Oswald (1986, Table 1) in US manufacturing in 1980 such plans covered about 50 per cent of workers in unionised plants and companies with at least 1000 workers, but the percentage was very small (4 per cent) outside manufacturing, and it seems reasonable to assume that such employer-schemes are restricted to (part) of the regular employment sector. The second possibility is for union-schemes. In nineteenth century Britain a substantial number of trade unions provided out of work benefits to their members, and a number continue to do so (Beenstock and Brasse, 1986). In Sweden, Finland and Denmark, the unemployment insurance funds have close ties with the trade union movement: "for most purposes, a UI fund may be regarded as an integral part of a trade union" (Holmlund and Lundborg, 1988, p 161). In this paper, we concentrate on UI schemes that are operated by the state.

Examination of the benefit statistics for countries that operate both UI and UA schemes reveals that the unemployed fall into four categories:

- those receiving only UI
- those receiving UA in supplementation of UI
- those receiving only UA
- those not receiving benefit.

Individuals not receiving UI will include those who are not eligible because they fail to meet the contribution conditions (d'), those who have been disqualified (a', b' or c'), and those who have exhausted their entitlement (f'). It is for these reasons that only a fraction of the unemployed receive UI. According to Burtless, in the US in 1982 the insured unemployment rate was under half the total unemployment rate (1983, Table 1). Blank and Card (1989) report that by 1987, the proportion of the unemployed receiving UI was less than 30 per cent and conclude that lower take-up has been one important reason for a fall in the level of UI receipt in the US. In Britain, the proportion of those registered as unemployed in 1988 who were actually receiving UI was only 24 per cent for men and 34 per cent for women (our own calculations based on unpublished administrative analyses of 5 per cent samples of the unemployed taken in May and November). These figures refer to those claiming benefits, so that poor take-up does not help to explain the lack of coverage. The most important reasons for absence of UI were the failure to satisfy condition (d') - insufficient contributions to qualify - and the impact of condition (f') through the exhaustion of the duration of entitlement; these two reasons accounted for 29 per cent and 56 per cent respectively of male non-recipients and 43 per cent and 31 per cent of females. (Disqualification on the other hand, occurred in less than 1 per cent of cases for both sexes).

The US and the UK may be rather extreme cases so far as their low coverage of UI is concerned, but the existence of a sizeable fraction of the unemployed who do not receive UI is a feature of other OECD countries. Burtless (1987) reports the proportion of the unemployed in receipt of UI in 1985 to be 39 per cent in France, 55 per cent in West Germany and 68 per cent in Sweden.

Of those not eligible for UI, some will not receive support from UA because they have other income (eg from savings) or because they have a partner with earnings which takes them above the eligibility limit. Others are eligible but do not claim the assistance to which they are entitled (Atkinson and Micklewright, 1985, provide evidence on non-take-up of UA for Britain). Taking just those individuals registered as unemployed and claiming benefits, the unemployed (men and women) in Britain in November

1988 were divided between the four possible categories of receipt described as below.

	%
UI only	20
UI and UA	6
UA only	56
No UI nor UA	18

(source: authors' calculations using 5 per cent sample of claimants)

This means that nearly 1 in 5 of those registered as claimants receive no benefit and there are as well those not registered who are also not in receipt.

Analysts of unemployment often treat UI and UA as being little different in their predicted implications, but this is not the case. There is a clear hierachy with UI ranking ahead of UA on several counts. First, as described above, the conditions under which the two benefits are paid are very different with respect to the unit of assessment and the extent to which people have a clear title to benefit. Secondly, the level of benefit paid out on the latter may be lower. This may come about through means-testing or it may be because the maximum benefit level under UA is less than that on UI, even for someone with no other income. In West Germany, both UI and UA payments are related to past earnings but the maximum benefit-earnings ratio is some 10 percentage points lower for UA. Moreover, whereas UI payments are not reduced by income testing, this often leads to a reduction in UA payments. In April 1983, a third of those receiving UA in West Germany had their payments reduced by the means-test (Reubens, 1989). In the UK, neither UI nor UA are related to past earnings and the relationship between the benefit levels under the two schemes is such that it is possible for the benefit received under UA to be no lower than under UI. However, amongst men unemployed for less than a year in the 1970s, we have estimated that in two-thirds of cases exhaustion of UI would have implied a reduction in benefit, the fall being on average enough to reduce the ratio of benefit to last earnings by 8 percentage points (Atkinson and Micklewright, 1985, table 7.5). For married women, the exhaustion of UI in Britain means in most cases a complete loss of benefits. As these examples from West Germany and the UK illustrate, the distinction between UI and UA may certainly "matter" as far as the level of

benefit is concerned. To talk about these countries as having "indefinite" benefits for the unemployed (Layard, 1989, Table 13.2) is to gloss over an important distinction.

ii) The job search model

The conclusions drawn with regard to UI or UA depend on the assumptions made with regard to the working of the labour market. Much of the econometric work on the probability of return to employment is based on a model of job search. In the 'standard' job search model, the distribution of wages is treated as exogenous and in simple versions of the model the intensity of search is fixed. The strategy of the unemployed worker is described in terms of a reservation wage, a job being accepted if and only if the offered wage exceeds this level, and the reservation wage rises with the level of unemployment benefit. This leads to the prediction that increases in unemployment compensation lead to a reduced probability of making the transition from unemployment to employment.

The standard model (for example, Lippman and McCall, 1979) assumes that a person is concerned with the expected present value of income over an infinite horizon, discounted at rate ρ. A job once accepted is assumed to last forever at a constant wage, w. The person is assumed to receive job offers at a constant rate λ per unit of time and the probability of a job offering a wage of at least w is the same, $1 - F(w)$, at all dates (there is a stationary distribution of wage offers). Past job offers cannot be recalled. When out of work the person has a value of leisure, or home production, v. If the level of unemployment compensation is assumed constant over time, and is denoted by b, there is a stationary reservation wage, w^*, which must satisfy the following condition (see, for example, Hey, 1979, Chapter 14):

$$w^* - (b+v) = \lambda (1-F(w^*))[w^{**} - w^*]/ \rho$$

where w^{**} is the expected wage conditional on $w \geq w^*$.

The choice of the reservation wage may be seen as balancing, on the left hand side, the increased income from accepting w^* today against, on

the right hand side, the improvement over w^* expected from holding out, where this improvement is an infinite stream and hence is discounted at a rate ρ. This is illustrated in Figure 1. Where w^* is greater than the lowest wage which is offered, w_o, a rise in the benefit leads to a reduction in the probability of return to work, as shown. If w^* is less than w_o, then the person would accept any job offer, and the probability of return to work is simply λ - see the lower part of Figure 1. In this situation an increase in benefit would have no effect, at least within a certain range. In the special case where there are only two wage offers that a person may receive - a good job paying w_1 or a bad job paying w_o - the reservation wage is a weighted average of w_1 and the net income unemployed (b+v). It is assumed that the good job is preferable to being unemployed ($w_1 \succ b+v$), but this is not necessarily true for the bad job, in which case it is possible that the reservation wage is less than w_o, so that variations in the level of unemployment compensation make no difference, within a range.

(iii) Modelling unemployment compensation

To what system of unemployment compensation does this analysis correspond? Is it UI? First of all, it is obvious that the assumption of an unlimited duration of benefit is an inappropriate one. The implications of a limited duration of benefit, condition (f') in our schema, have been examined by Mortensen (1977) and Burdett (1979), two of the relatively small number of scholars who have paid attention to the real-world features of unemployment compensation. Moreover, they bring out the importance of the assumption in the standard search model that a job, once accepted, lasts for ever. As is pointed out by Hey and Mavromaras,

> "After all, unemployment insurance is supposed to be *insurance* against the misfortune of becoming *unemployed*, and not simply a subsidy to prevent starvation while searching for a suitable (lifetime) occupation" (1981, p 318).

Where there is a risk of future unemployment, then the existence of UI reduces the risk of returning to work, as has been shown by Mortensen:

> "an increase in either the benefit rate or the maximum benefit period induces an increase in the indirect utility of being laid off in the future as well as the indirect utility of remaining

> unemployed during a current spell in the case of a qualified [for UI] worker. Because employment is more attractive as a consequence of the first effect, it tends to offset the increase in the incentive to remain unemployed implied by the second. Indeed, the first effect dominates if the worker is near the end of his or her benefit period or has exhausted benefits receivable during the spell." (Mortensen, 1977, p 511).

This illustrates the fact that UI may have positive as well as negative effects on the transition from unemployment to employment.

The analysis of Burdett (1979) also allows for the feature (e') of UI in that he examines the implications of the benefit being a linear function of the pre-unemployment wage, up to a ceiling, which is typical of the benefit formula in many countries, the UK with its flat-rate benefit being an exception. A general earnings-related formula is considered by Hey and Mavromaras (1981), who make an explicit comparison with a flat-rate benefit. As the latter authors note, the impact of contributions - feature (d') of UI - may be treated as deductions from wages in employment, where it is assumed that the burden falls entirely on the employee. This has been further developed by Wright and Loberg (1987) and by Mavromaras (1987). The latter, in a general equilibrium setting, shows in numerical simulations, that a (first round) expenditure-neutral switch from flat-rate payments to a benefit immediately proportional to the previous wage reduces the equilibrium unemployment rate. One concern of these authors is the choice by workers between jobs with different probabilities of subsequent permanent layoff - see also Burdett and Mortensen (1980). Insofar as jobs with a high probability of termination correspond to our category of 'marginal jobs', this may be seen as casting light on the effect of unemployment compensation on whether people leave unemployment for regular or marginal employment.

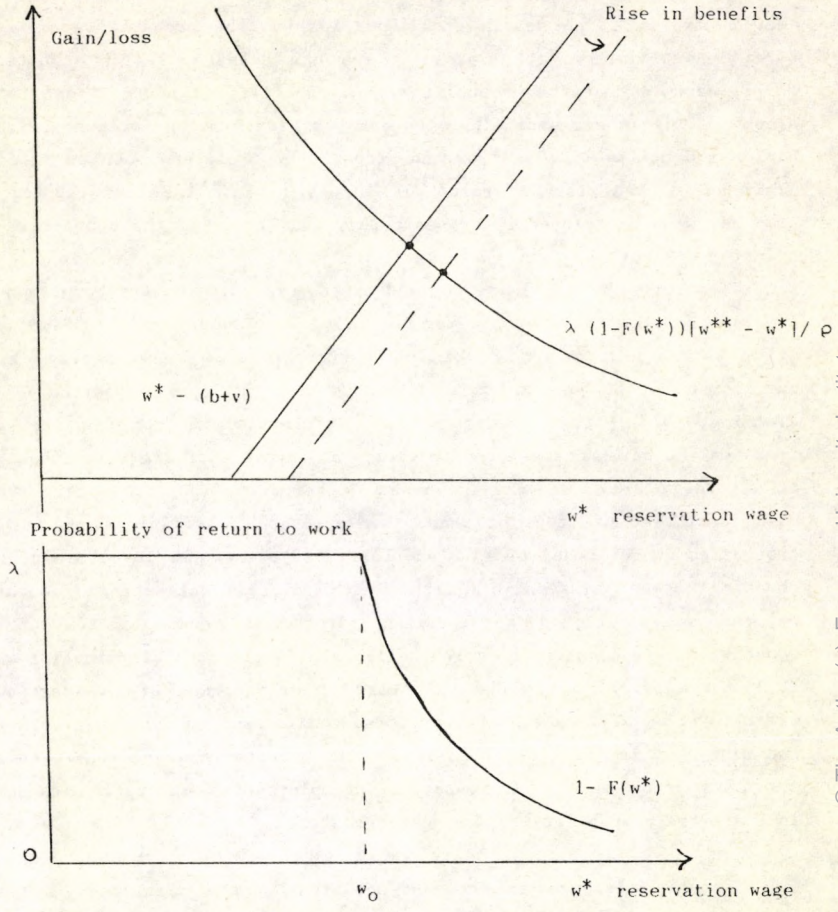

FIGURE 1 Reservation Wages and Benefits in the Standard Job Search Model

We have considered conditions (d'), (e') and (f') of UI benefit; the first three conditions (a'), (b') and (c') apply also to UA. A number of models have made job search endogenous, making the probability of a job offer conditional on, for example, the amount spent on search. Mortensen (1977) assumes that the probability of a job offer is proportional to the amount of time spent searching, the cost of search being foregone leisure; Barron and Mellow (1979) allow the probability to depend both on time and money spent. The standard result is that a rise in benefits reduces the time per week unemployed spent searching, thus reducing the probability of transition to employment, but that the money spent on job search may increase. Moreover, if time spent and market expenditures are complementary inputs, then the total effect may be ambiguous (Tannery, 1983). Similarly, if we assume that there are binding restrictions on the capacity of the unemployed to borrow to finance search activity (as is discussed by Flemming, 1978), it is then possible that unemployment compensation would increase the resources devoted to search and hence *increase* the probability of return to work (see Ben-Horim and Zuckerman, 1987). Several authors have considered the type of search, as opposed to its intensity. In the two-period search model of Kahn and Low (1988), the unemployed are seen as choosing between systematic search, which involves collecting information on the wages offered by specific firms and random search of the conventional type where the worker elicits offers from a distribution which is known *a priori* but where the searcher is ignorant of the particular offer any firm will make. Systematic search is assumed costly in both time and money but is more likely to lead to an acceptable wage, conditional on an offer being made. Increases in unemployment compensation therefore increase the probability of systematic search.

Although reference is made on occasion to the relevance of search activity to the conditions of eligibility for benefit (for example, Baily, 1977, p 386), this is not typically made explicit in the analysis of the effects of unemployment compensation. The probability of disqualification if search activity falls below some minimum required level needs to be introduced; in terms of modelling, the raw materials are there but they are not applied. In fact, a number of contributions to the literature contain elements which are relevant to the consideration of features such as (a'), (b') and (c'), but they are rarely applied to the concrete analysis of

unemployment compensation. For example, Wright (1987) draws attention to the crucial role played by the assumptions whether or not a person may sample new jobs at once after quitting or being laid off. This is a valuable clarification, but more important in reality than the delay in being able to search for a new job offer is likely to be the delay in receiving unemployment benefit in the event of quitting, whereas he makes only a passing reference to the latter possibility.

The analysis of the monitoring of benefit receipt introduces a source of uncertainty additional to that arising from the uncertain arrival of wage offers. Uncertainty about the system of unemployment compensation may be just as important. Loss of benefit may be feared even if the person is fulfilling the conditions, and means-tested benefits in particular seem liable to generate these anxieties. The operation of means tests inevitably involves Type I error as well as Type II, with some eligible claimants being denied benefit, as well as some ineligibles allowed receipt. (For discussion of the balance between these types of error, see Goodin, 1985, and Atkinson, 1988.) There may also be uncertainty concerning benefits in work that has been investigated by Jenkins and Millar (1989), who stress that making the transition from unemployment to work involves a risk in that the level of in-work benefits (such as means-tested assistance to working families) is not known in advance and is subject to uncertainty. In their analysis they allow for risk aversion on the part of workers, which is evidently a more realistic assumption than that of risk neutrality made so far here.

There are indeed a number of features of the present model that are either unrealistic or which need to be relaxed in a full model of the labour market. Most importantly, we have only looked at one side of the market. The worker is assumed to treat the wage offers as exogenously given. The behaviour of employers, and their role in filling jobs, has not yet been considered. In the search theory context, there is the central question as to what determines the wage offer distribution. As Rothschild (1973) pointed out, the standard search model is only "partial-partial", lacking an explanation as to why there should be a distribution of wage offers (if there were only one going wage then the job search story would collapse).

Before bringing together the two sides of the market, we may consider the effect of unemployment compensation from the standpoint of an employer who takes as given the conditions on which labour is supplied. Brechling (1977) for example has considered the choice between increasing hours per worker and increasing the number of workers, and the decision as to how rapidly to lay off redundant workers, by an employer who faces a supply of labour at a given wage. In a detailed analysis of the determinants of the taxable payroll in the US, he shows how the decisions are affected by experience-rating and by the fact that there is an annual ceiling on pay for which employer contributions are payable. Among other items, he draws attention to the fact that the cost, in terms of additional contributions, arising from voluntary quits (this raising the ratio of the taxable to the total payroll for the firm), may lead employers to be "reluctant to hire employees from groups that have a high propensity to quit voluntarily" (1977, p 492). This may in turn have implications for the willingness of employers to recruit among those currently holding marginal jobs.

The representation of the labour supply side in terms of a specified wage does not allow for the fact that there may be a trade-off between the wage paid and the probability of continued employment. The reservation level of utility for workers is one of the ingredients in the implicit contract theories which again focus on the employer side of the market. Firms are assumed to design an optimal contract to share risk arising from uncertain future demand, or to even out known seasonal fluctuations, subject to a reservation utility level. As has been argued by Baily (1977) and Feldstein (1976), tax exempt unemployment benefits and imperfect experience-rating (so that firms do not pay the marginal actuarial cost of a layoff) may provide an inducement for employers to lay off workers. This increases the employment/unemployment transition probability. As the subsequent literature has shown, however, the precise implications depend on the degrees of risk aversion of employees and employers and on the information which both sides possess. In a model due to Mortensen (1983), unemployment benefit and layoffs may be positively related even if there is perfect experience-rating. Topel (1983) argues that the sign of any effect of unemployment insurance is ambiguous. If there is perfect experience-rating but the level of benefit payments is set by the

government above that which would have existed privately (risk averse workers are assumed) then the cost of layoffs will be increased and the incidence of unemployment will decline.

iv) Equilibrium theories

The market approach to search behaviour has been the subject of a sizeable literature, which, beginning with Diamond (1971), has sought to explain the existence of an equilibrium non-degenerate distribution of wage offers. Why should there be a persistent need for search? If such a non-degenerate distribution of offers exists, how is it affected by unemployment compensation? Is the effect of a rise in benefits more important for the wages offered than for the acceptance probability?

The equilibrium approach may be illustrated by reference to the work of Albrecht and Axell (1984), who show how a two-wage (w_o and w_1) equilibrium may arise where there are two different types of people, differing according to the value of their leisure/home production, v_o and v_1, where $v_o < v_1$; and where there is heterogeneity in firms in terms of the productivity of labour. In a dispersion equilibrium, a fraction of firms will offer w_1 equal to (v_1+b), where b is the amount of unemployment benefit, and the remainder offer a wage w_o which is a weighted average of w_1 and (v_o+b). In this equilibrium model, in which the wage offer distribution is endogenous, a general rise in unemployment benefit increases the higher wage £1 for each £1 increase in benefit. It also increases the lower wage, but, where the density of the distribution of firms according to productivity is non-decreasing, by less than £1. The equilibrium rate of unemployment rises (under the same condition on the density).

This model of equilibrium search, like others of a similar kind, makes a valuable contribution but also serves to illustrate some of the shortcomings. First, the model has certain predictions which may cast doubt on the real-world applicability of the findings. The reader may for example be surprised that the effect of unemployment compensation is to *widen* the wage distribution, whereas it is often asserted that its effect is to push up the wages of the unskilled. This is linked to the fact that

the unemployed in this model are entirely those who are better endowed (in terms of the value of leisure/home production), waiting until they get a high wage offer. Second, the unemployment benefit bears no relation to either UI or UA. The fact that the unemployed consist entirely of those who have not held a job (a job once accepted lasts for a lifetime) means that they cannot have fulfilled the contribution conditions for UI. The fact that they have rejected the offer of a low wage job means that under typical UI and UA schemes they would, at least in principle, be in danger of being disqualified from benefit.

In their mis-representation of unemployment compensation, Albrecht and Axell are not alone, as we have stressed earlier; and in the majority of papers dealing with unemployment benefit in an equilibrium setting (such as job-matching models) the benefit is assumed to have very unrealistic properties. Here we concentrate on two contributions which have paid explicit attention to the key features we identified at the start of this section.

The analysis of Burdett and Mortensen (1980) serves to illustrate both the role of institutional features of UI and the implications of looking at both sides of the market. They allow for search behaviour by workers and the offer of contracts by employers which include the possibility of layoff. Under the assumptions they make, there exists a wage such that an unemployed worker is willing to accept a job irrespective of the risk of layoff; on the other hand, he can continue to search while employed for a more acceptable job. This means that an employer must pay a premium to retain a worker's permanent attachment. In equilibrium, there is unemployment of both those searching for a position and those attached to a firm but laid-off. Burdett and Mortensen use the model to examine the equilibrium effects of UI, where they explicitly treat the fact that new entrants do not qualify for benefit, this being a crucial feature, as we have noted earlier. The effect of UI is, as in the analysis of Feldstein (1976) and others, to reduce the cost of layoff (there is no experience-rating) and it leads firms to increase their desired number of attached workers, which induces a rise in the equilibrium wage. This in turn leads to a reduction in the level of search unemployment as it stimulates more active search by new entrants (who receive no UI). The

layoff probability increases on account of the rise in UI but this may be offset by the rise in the equilibrium wage. As the authors comment, the implications are "much richer" and this sort of model illustrates the variety of effects that unemployment compensation may have.

The second example is the analysis of Pissarides (1979). This is more limited in that he does not seek to explain the wage level (it is assumed that all jobs pay the same exogenous wage), but he provides more detail of the process by which jobs are filled. In particular, he introduces an important real-world feature which we have not so far discussed - a state employment agency. Receipt of UI benefit is conditional on registration by the unemployed with the agency. There is a fixed rate of benefit at a level below the wage rate, so that an unemployed person always accepts a job offer. It is payable to all those out of work. The search of the unemployed is for a vacancy, not for a job with a rate of pay in excess of the reservation wage. (There is equally no search on the job and no voluntary quitting.) Firms either register vacancies at the agency or advertise positions to attract workers searching privately. The agency matches registered vacancies and the unemployed according to a matching function. Unemployed who are not placed by the agency may choose to engage in private search for a vacancy and those jobs not registered with the agency may be filled in this way. There is an exogenous separation property for each job.

In this model of matching, it is shown by Pissarides that an increase in the rate of unemployment benefit reduces the attractiveness of employment and so reduces the returns from private job search. There is a decline in the number of workers engaged in private search. Firms respond by reducing their advertising and choose to register more of their vacancies with the agency, so that both the unemployed and firms rely more heavily on the state agency. The equilibrium level of unemployment rises. It is possible that a rise in benefit may move the equilibrium to a corner where all matchings take place via the agency, in which case further increases in benefit have no effect on the level of unemployment.

This analysis introduces certain important institutional elements, notably the link with the state employment agency, and Pissarides discusses

further how the condition (b') of UI may be enforced, for example by linking the payment of benefits to proof of contact with potential employers. It may be noted that this policy has been used in practice: for example, in the UK there was the "genuinely seeking work test" in the inter-war period. This was unpopular with employers as well as the unemployed, the former complaining that they were pestered by the latter for proof that non-existent jobs had been applied for (Deacon, 1977).

v) Efficiency Wage and Dual Labour Market Theories

Returning to the determination of wages, we consider in this section the alternative approach adopted in efficiency wage models. According to this approach, labour productivity increases with the wage paid: for example, because reduced supervision is necessary, or reduced turnover takes place, or on account of improved morale. Employers determine the profit-maximising wage and there is no incentive for them to reduce this wage in the face of unemployment. Stiglitz (1986) has noted that policy consequences may differ markedly with different versions of the efficiency wage model and illustrates this by considering the effect of an increase in unemployment benefit. Where worker effort depends on the risk of being fired for shirking, and the cost of being fired is that the worker has to live on unemployment benefit, then the wage paid is equal to the benefit plus a premium which depends on the cost of effort and the probability of being monitored. In this case, an increase of £1 in the unemployment compensation leads to £1 increase in the efficiency wage and this leads in turn to a fall in the level of employment (this may be intensified if account is taken of the financing of the benefits - see Shapiro and Stiglitz, 1984). On the other hand, an increase in benefits may increase employment if efficiency wages arise due to firms possessing imperfect information concerning the ability of workers. In this version of the model, the quality-mix of applicants depends on the wages offered on the assumption that workers' ability levels and reservation wages are correlated. Firms must hire randomly due to their imperfect information (institutional or social constraints are alternative explanations). Suppose that an increase in unemployment benefit reduces the search intensity of low productivity workers relative to that of workers of higher productivity. In this case the average quality of applicants at any

offered wage will rise. Labour demand rises and unemployment falls.

The shirking/supervision cost version of the model has been elaborated by Bulow and Summers (1986) to give a dual labour market model. They argue that direct transitions between regular and marginal jobs are infrequent: "workers who lose primary-sector jobs appear to be very unlikely to accept stopgap jobs in the secondary sector" (1986, p. 404). To secure regular employment, workers have to queue as unemployed. The cell in the transition matrix for movements from marginal to regular jobs is therefore empty. (We discussed this assumption in Section 1.) In a model of this type, the primary sector has to pay a wage premium over that available in the secondary sector; and it can be shown (Atkinson, 1988a) that the wage differential between the two sectors is unchanged by a rise in unemployment compensation, a finding which may be contrasted with that of Albrecht and Axell (1984) cited above. What happens is that there is a rise in 'wait' unemployment: the rise in unemployment benefit provides an incentive for workers in marginal jobs to quit in order to be considered for regular employment. These dual labour market models may be seen as capturing the difference between regular and marginal employment, although as we stressed earlier this distinction may be better seen as relating to *jobs* than to *sectors*.

In our view these dual labour market models are of considerable interest; at the same time the treatment of unemployment compensation leaves a lot to be desired. Most importantly, the central feature of the shirking model is the threat of dismissal for industrial misconduct, which is relevant to the condition (a') for the receipt of UI. Industrial misconduct is not easily defined, and

> "it can cover a wide range of disruptive behaviour and bad work, which is causally connected with the loss of employment, and where there is evidence of fault" (Fenn, 1980, p 243).

It therefore seems likely that shirking would lead to a risk of disqualification; and we should note that employers have a strong incentive to report job loss as resulting from misconduct insofar as there is experience-rating or statutory redundancy payments, because this would reduce employer liability. In calculating the cost of shirking, the worker

should therefore not reckon on receiving benefit in the event of dismissal for lack of effort. Atkinson (1988a) shows that taking account of this condition, together with allowing for benefit exhaustion, and the non-coverage of secondary sector workers by UI, may lead to quite different conclusions. A rise in the benefit level *reduces* the level of the primary sector wage and increases employment in the primary sector. It is true that unemployment rises overall, as more workers are induced to leave secondary sector jobs to join the queue for primary sector jobs, but we have a rather different perspective on the role of UI.

vi) Theoretical treatment of unemployment compensation: a summary

Our emphasis in this section has been on the institutional features of unemployment compensation and the extent to which they affect the conclusions drawn with regard to its impact on different labour market transitions. The main elements, and the ways in which they have been treated, are summarised in Table 2. As this indicates, individual elements have received attention in isolated studies and we have focussed in this review on these contributions. But the great generality of studies reaching conclusions about unemployment compensation have paid scant attention to the institutional details. And some elements have been almost totally ignored. This applies to the means-tested nature of UA and the implications of the family/household assessment, which are particularly likely to be important for the decisions of couples. (The literature on decisions about hours of work has shown the importance of the interdependence of budget constraints.)

The importance of the institutional aspects is a matter on which we would like to insist. It might be thought that they are of second-order significance, but the specification of the form of unemployment compensation may be critical to its economic impact. Any theoretical model has to abstract from features of reality, but in abstracting we should not lose sight of the essential features.

The second main theme of this paper is that there are several labour market states. Much of the theoretical literature on unemployment compensation deals with a two-state model of the labour market, considering

only movements between employment and unemployment. It does not allow for people quitting unemployment to leave the labour force or to enter full-time training. No account is taken of additions to the labour force. It typically does not distinguish between regular and marginal employment. There are of course exceptions. The dual labour market theories may be seen as capturing the differential quality of employment. There have been analyses of retirement decisions (for example, Diamond and Mirrlees, 1978 and Sheshinski, 1978). As far as training is concerned, human capital and other theories are clearly relevant. Kodde (1988) has examined a two-period model where decisions about human capital investment allow for the possibility of future unemployment. Pissarides (1976) considers the impact of unemployment compensation on transitions to and from inactivity. Not suprisingly, the effect of a change in benefits on participation hinges on whether only active searchers receive unemployment benefits or not. If this is the case then a cut in benefits increases transitions from unemployment into inactivity as well as employment but if non-participants also receive unemployment compensation then the effect of a change in benefits is ambiguous since a rise in benefits increases the utility of non-participation. There is the 'entitlement effect' of UI which makes participation in paid work more attractive. As was identified by Friedman in his Nobel Lecture, "the availability of unemployment insurance makes it more attractive to enter the labour force" (1977, p. 458). The transition from unemployment into government labour market programmes, including full-time training, is considered in the search model presented by Hui and Trivedi (1986). A low ratio of benefit to training allowance produces an incentive to enter the training programme, but if entry to the programme is restricted to the long-term unemployed this produces a disincentive to exit from unemployment in the pre-eligibility period. But overall it remains the case that it is unemployment and employment (regardless of its quality) which has received the bulk of attention.

Table 2: Institutional Features of Unemployment Insurance (UI) and Unemployment Assistance (UA)

		Treatment
Unemployment Insurance		
(a')	Disqualification for voluntary quitting/ industrial misconduct	Can be treated in shirking model (Atkinson, 1988a) and in models which allow for quitting prospective job (Wright, 1987).
(b')	Conditional on job search	Could be treated in models of variable search intensity.
(c')	Disqualification for refusal of job offers	Interaction with state employment agency treated by Pissarides (1979).
(d')	Contribution conditions	Re-qualification for benefit treated in search models Mortensen (1977) and Burdett (1979). Effect of employer contribution schedule treated by Brechling (1977). Temporary layoffs treated by Feldstein (1976). Non-eligibility of new entrants treated by Burdett and Mortensen (1980). Non-coverage treated in dual labour market model (Atkinson, 1988a).
(e')	Earnings-related benefits	Burdett (1979), Hey and Mavromaras (1981), Mavromaras (1987).
(f')	Limited duration	Treated by Mortensen (1977) and Burdett (1979).
Unemployment Assistance		
(a') to (c') as above		
(e")	Means-tested on other income/assets	-
(g")	Family/household assessment unit	-

3. EMPIRICAL EVIDENCE ON UNEMPLOYMENT COMPENSATION AND LABOUR MARKET TRANSITIONS

i) Assessing the impact of unemployment compensation

The same reservations concerning the emphasis of the theoretical models apply to the empirical evidence. First, research has, in the main, been concentrated on the total flows into and out of unemployment. We take particular note in our account of the evidence of those contributions to the literature that have looked at the effect of unemployment compensation on separate flows to and from different labour market states. To what extent does it matter in practice if we do not distinguish these different states? This may be particularly significant when looking at the impact of unemployment compensation on the labour market transitions of women and it is important to point out that much of the available evidence relates only to *male* workers, which is a serious limitation. One of the major features common to OECD labour markets has been the rise in the participation of married women, and this has undoubtedly affected the extent to which different labour market transitions may be influenced by government policy (as with hours of work, where empirical evidence suggests that the labour supply responses of women to changes in transfers are rather different from that of men).

Secondly, we have seen how unemployment compensation is not a single variable, exogenously determined. Benefit payments vary considerably with individual characteristics and behaviour, past and present, together with the way in which the benefit system is administered. In the same way that this has, with some notable exceptions, been ignored in much of the theoretical literature, empirical modelling of the impact of unemployment compensation runs the danger of skating over important institutional details. In this section we look at how analysts have handled unemployment compensation in empirical models. It is clear that in common with the theoretical literature, the emphasis has typically been on the effects of changes in benefit levels rather than the different conditions for receipt of UI and UA which we summarised in Section 2. We try and redress the balance somewhat by devoting space to those studies which have looked at the impact of parameters of unemployment compensation schemes other than

the level of benefit payment.

In assessing what is a sophisticated applied literature we should stress that our focus is very much with the treatment of unemployment compensation. We are not concerned with the econometric problems of estimating models of unemployment duration, for example, except in the case where these are relevant to the handling of unemployment compensation. Moreover, for reasons of space we cannot consider each study in detail (for a review of several British models see Atkinson and Micklewright, 1985, Chapter 8) but we do need to outline the sorts of issues that arise and which the reader needs to bear in mind when consulting the original sources.

There are several different types of empirical evidence: aggregate time-series analyses, cross-section studies based on sample surveys or panel data on individuals, investigations based on administrative records, and experimental evidence. These different sources are sometimes seen in adversarial terms, with one group of authors making use of one type of evidence and a rival group espousing another. In our view, however, they should be seen as complementary. Our review of what theory has to say about unemployment benefits suggests a variety of different effects and it may be that these can only be revealed with different types of data. The aggregate time-series approach provides a direct answer as to the effect of temporal variation in parameters of benefit systems on aggregate unemployment flows or totals and this is of obvious interest to policy makers. A time-series approach has thus been used by those attempting to assess the effect of the introduction of earnings-related benefit in the UK in 1966 and of the large increases in the real value of benefits in Australia in 1972-74, both of which ocurred at the same time as a sharp rise in unemployment. This approach, whether as a 'reduced form' with no explicit model of the labour market (for example, Maki and Spindler (1975) and Grubel and Maki (1976)), or whether as a set of fully-specified equations (as in Layard and Nickell, 1986), has the advantage of capturing effects on both sides of the market. As we have seen, unemployment benefit may affect wage-setting behaviour of firms, with no apparent direct effect on the duration of individual unemployment, and this would not be detected within a partial equilbrium search theory framework. Different sources

may give us different results about the effects of unemployment benefits without there being any conflict or paradox involved.

The aggregate time-series approach cannot however allow for the diverse nature of the budget constraints facing individuals. As far as research on the effects of benefit levels is concerned, the typical practice is to consider the benefits received by a "representative" worker, or the average benefit payments actually received by the unemployed, and compare one of these measures with the average earnings of the employed. This fails to allow for the fact that the ratio of income while unemployed to that received while in work can vary enormously across the population and in a manner that is not uniform across time (see Atkinson and Micklewright, 1985, for evidence from the UK and Hammermesh, 1977, for the US).

The distinction between UI and UA, and in particular the provisions relating to the treatment of family characteristics and income under the latter, are major causes of this considerable diversity. Even among those individuals receiving UI only, variation in actual replacement rates will typically occur despite a single, nationwide, legislated ratio of UI to earnings, due to the operation of a maximum threshold on benefit. For example, Jensen and Westergard-Nielsen (1989) estimate that less than a fifth of the insured workforce in Denmark in 1984 would have received UI at the statutory rate of 90 per cent of earnings had they been unemployed, the remaining four-fifths being distributed across rates below this because of the operation of the maximum benefit rule. The maximum benefit payable was fixed in nominal terms in Denmark during 1983-87, implying that this measure of the generosity of UI was declining in real value despite the statutory benefit-earnings ratio being constant. It is clearly very difficult to pick a single series which will represent the changes over time in the generosity of what, given the existence of UA as well, may be a complex two-tier unemployment compensation system. Finally, there remains the possibility that the parameters of the system of unemployment compensation, including the level and duration of benefit, and the system's administration may themselves be influenced by the state of the labour market. This will occur if higher unemployment is perceived as requiring a more generous benefit system (an example is the extended benefit programme in the US); unemployment and benefits may therefore be simultaneously

determined at the aggregate level.

Micro-data from sample surveys or administrative records allow the individual variation in benefit receipt and its relation to earnings to be modelled, and this source of evidence has been extensively used, in particular in those studies motivated by search theory which have looked at the determinants of individuals' exit probabilities from unemployment. At the same time, the use of micro data is not without problems. Firstly, one should not underestimate the difficulties of accurately modelling the benefit system at the individual level, allowing for contribution conditions for UI, take-up of entitlement to different benefits and any changes in the level of compensation over a spell of unemployment brought about, for example, by a switch to UA. A single reported figure for the benefit in payment at one point of an unemployment spell may not provide enough information for the analyst to work from (Atkinson and Micklewright, 1985, Chapter 6, discuss the problems of calculating "replacement histories" in the case of the UK). If unemployment compensation is not fixed over a spell of unemployment, then the failure to allow for this when modelling unemployment duration represents a specification error.

The problems in allowing for variation in benefits over time in stuctural models of unemployment duration which attempt to model the separate probabilities of job offer and acceptance is one reason why, in our view, reduced form models (which do not attempt to do this) may provide results about the effects of benefits on exit probabilities which are more reliable. Reduced form models provide a much greater degree of flexibility which can be used to handle the institutional details of benefit systems although, as with aggregate data, it still needs to be recognised that there may be a problem of benefit endogeneity. Florens et al (1988) note that in France the variation of unemployment compensation over a spell cannot be formalised by a deterministic equation since the benefit authorities have some flexibility in the application of the rules. This gives rise to additional econometric problems. Access to administrative data recording the sequence of actual benefit payments throughout a spell represents a substantial advantage. However, there remains a problem that these payments may partly proxy determinants of transition probabilities that the researcher has been unable to control for. Once we recognise the

complexity of the operation of real-world benefit systems, it becomes clear that receipt of benefit is not independent of labour market behaviour. A low level of benefit could reflect a poor employment record which the econometrician does not observe and hence a low re-employment probability. But it might be due to a failure to claim, reflecting an unwillingness to live off benefits and turn down job offers.

Secondly, the modelling of inflow or outflow probabilities has been based on the assumption that the individuals' experiences of unemployment are independent. While this may be true for the sample used in estimation, it may not be the case for the population from which the sample is drawn. Suppose for example that *ceteris paribus* we observe that persons with higher benefits exit unemployment more slowly. This does not necessarily mean that aggregate unemployment is higher since the refusal of jobs by one group may lead to the work being offered to others. In other words it is the composition of unemployment which is altered. Thus we can think of there being an aggregation problem involved with the use of micro-data. (A useful analogy is with the literature on targeted employment subsidies which has emphasised that subsidies tend to improve some individuals' employment prospects at the expenses of others, the latter suffering from what are known as "displacement" effects.)

Experimental evidence on the effects of unemployment compensation is scarce. Where it exists, it might seem to offer a solution to many of the problems of both aggregate time-series and micro data which we have described. However, experimental data have problems of their own and one which particularly concerns us here is that while they may be designed to shed light on one labour market transition, a permanent programme along the lines of the experiment may have an impact on others as well. For example, a policy experiment might alter the incentive to return to work and be applied only to the currently unemployed at a certain date. Such an experiment would have no effect on inflows to unemployment but if the policy was established as a permanent programme, the incentive to enter unemployment could be altered.

Finally, in reporting the empirical evidence we restrict ourselves to those studies which have attempted to model explicitly (with either micro

or aggregate data) the effect of unemployment compensation on one or more of the transitions between labour market states we have described. This means that we do not survey evidence on the effects of benefits in wage equations of structural models of the aggregate labour market or their impact in reduced form models of aggregate unemployment that lack an explicit underlying structure.

ii) Exit from unemployment and levels of unemployment compensation

The aspect of unemployment compensation that has received most attention is the impact of benefit levels on the transitions out of unemployment. One reason for the focus on outflows from unemployment may be their relative importance in explaining changes in overall unemployment levels. Rises in unemployment in Europe have been associated particularly with falls in outflows and lengthening durations of unemployment (Burda, 1988). What may be an extreme example is provided by the UK where almost all changes in unemployment in the years 1967-1983 can be attributed to changes in outflows, a period when unemployment varied between under 3 per cent to nearly 16 per cent (Pissarides, 1986). Sider (1985) shows that over a similar period, 1968-82, changes in inflows in the US did play a more important role in determining the overall level of unemployment and this may be a reason why North American research on inflows is more developed than in Europe. Nevertheless, Sider concludes that the effect of changes in outflows has dominated that of inflows (see Darby et al, 1986, for a dissenting view).

Several observers have concluded that firm evidence exists concerning the effect of variations in levels of unemployment compensation on the outflow from unemployment. Reviewing micro-data studies in the US, Danziger et al. (1981) find a positive relationship between unemployment insurance and duration of unemployment which "appears robust" (p.992). In the UK, considerable attention has been paid to the conclusion reached by Lancaster and Nickell (1980) based on their separate work - also using micro-data - that "the effect of benefits is a rather firmly established parameter" (p.151).

A number of points about these conclusions can be made. Firstly, the estimated effects reported in these studies are rather modest. Danziger et al. point to the work of Moffitt and Nicholson (1982) as the study they consider to be the most reliable; this indicates that a rise in the replacement ratio of 10 per cent would increase the duration of unemployment by about one week. Lancaster and Nickell concluded that the elasticity of unemployment duration with respect to benefits was about 0.6. These estimates suggest that only quite large cuts in benefits could raise outflows sufficiently to reduce unemployment by a substantial amount.

Secondly, the micro-data results from the US and the UK are not as robust as has been claimed, an aspect which has been emphasised by us elsewhere (Atkinson et al., 1984, Atkinson and Micklewright, 1985). One aspect that we highlighted was the sensitivity of results to assumptions made about the benefit system and this echoes our concern expressed earlier in this paper about the treatment of unemployment compensation in theoretical models. In our own analysis of UK unemployment duration, we found that the earlier results of Lancaster and Nickell could be reproduced if the benefit variable were calculated hypothetically for each person under the assumption of complete entitlement and take-up. However, when we based our calculations of the benefit variable (and its changes over the spell of unemployment) on the amounts reported as being received, its effect ceased to be significantly different from zero. In the US, Hills (1982) has noted the sensitivity of results in the well known work of Ehrenberg and Oaxaca (1976) to the treatment of those unemployed who do not file for benefits. Recent research has demonstrated more awareness of institutional details of unemployment compensation systems and the actual pattern of benefit receipt that they generate, including the variation of benefit payments over a spell of unemployment. Coupled with the use of data sets which accurately measure from administrative records the precise benefit amounts paid out to unemployed people, this has led to more reliable estimates of the effects of benefits. An important example from the UK is the study by Narendranathan et al. (1985), who using panel data supplemented with information from administrative records providing full benefit histories found a well-defined but very small benefit elasticity of duration (around 0.3). In the US, Moffitt (1985), Meyer (1988) and Katz and Meyer (1988) have used the Continuous Wage and Benefit History (CWBH)

data. Moffitt reports a benefit elasticity of about 0.4.

The third point which needs to be emphasised is that evidence of benefit effects on unemployment duration from the US and from Britain should not be taken as necesarily representative of those in other countries. Unemployment compensation systems and other labour market institutions may differ in a way that means a change in the level of benefits may not have the same effect across countries. For example, we would expect benefit increases to have the least effect in countries where the administration of the unemployment compensation, including the monitoring of job search, is very tight.

Evidence from the rest of the OECD on benefit effects is less voluminous, although appears to be increasing quite rapidly. In Australia (one of the very few OECD countries with UA but no UI), Trivedi and Kapuscinski (1985) report from their time-series work on outflows, "consistent and robust evidence" (p.181) of the effect of benefits on the probability of continuing in unemployment, but it should be noted that the effect they detect is again rather slight, a A$10 a week increase in unemployment benefit being estimated to increase spell lengths by 1.5 to 3 weeks. On the other hand, Florens et al. (1988) find benefit effects with a large French microdata set based on administrative records which "remain ambiguous and very sensitive to the model used as well as to the data which are considered" (p.47). Analysing unemployment spells recorded in the West German Social Economic Panel, Wurzel (1988) finds a negative but insignificant effect of benefits on unemployment duration. Using the same source, Hujer and Schneider (1989) do not enter the level of benefits but find that the switch from UI to UA appears to result in a significant fall in the exit probability, despite this switch resulting in a lower benefit level. Ham and Rea (1987) find no significant benefit level effect with Canadian microdata but note that the lack of geographical variation in benefit rules, in marked contrast to the US, may make benefit effects difficult to identify in a country such as Canada where benefits are a constant fraction of insurable earnings.

The fourth point we would like to make about the estimated effect of the level of unemployment compensation on the duration of unemployment

concerns the variation of the impact with the length of time unemployed and with personal characteristics, notably age. As far as the former is concerned, although there has been extensive discussion of duration dependence as such, there has been less attention paid to how the derivative of the transition probability with respect to unemployment benefits may change over time. One of the few authors to have addressed this question is Nickell (1979 and 1979a) in his study of unemployment duration in Britain. He allowed the coefficient on the replacement rate variable to vary with duration, and with his preferred version of the estimated equation he finds that after 20 weeks current benefits had no significant effect on the probability to return to work. With a more detailed UK data set, Narendranathan et al. (1985) find a significant benefit effect persisting after 6 months only for teenagers. This sort of evidence has important implications for policy suggesting, in the case of the UK, that income support for most of the long-term unemployed may be increased to a higher level without concern for incentives. If the evidence points the other way, as is suggested for Holland by van den Berg (1989) using a non-stationary structural model, the implications will of course be different (van den Berg finds a markedly higher benefit effect after 2 years).

iii)Outflows from unemployment to different labour market states

The bulk of work on the outflow from unemployment has modelled the *total* outflow to other labour market states and not the flow which may be of most interest to policy makers - that from unemployment to employment (this comment for example applies to all the UK studies referred to above). Thus even if we were to have a robust estimate of the effect of benefits on the total outflow probability for a given country we might well not be able to tell by how much a cut in benefits would actually raise employment as opposed to increasing withdrawals from the labour force and increasing the rate of entry into government training schemes. The importance of distinguishing the exit state from unemployment is demonstated by the work of Narandranathan and Stewart (1989). Using UK microdata, they find that a single-risk model, which does not distinguish the different transitions out of unemployment understates by about a quarter the effect of unemployment benefits on transitions to employment.

In theory one might expect unemployment benefit to deter all forms of exit. The relevant ratio is now, not that between benefit and income in employment, but that between benefit and income in training or out of the labour force. If for example the benefit level falls relative to student grants, this may make full-time education more attractive. The same may apply if the benefit falls relative to payments made to trainees on government schemes. In the UK, for example, the Government in announcing a new training programme for the long-term unemployed, stated that a premium of at least £10 would be paid over weekly unemployment benefit in order to provide an incentive to join the scheme (Department of Employment, 1988a). On the other hand, comparatively little is known about the determinants of the transition from unemployment to training and the impact of such a premium. The study from Sweden by Edin (1989) is unusual in that it models the separate flows from unemployment to public labour programmes as well as to employment and to inactivity. Problems with missing data prevent the use of information on unemployment compensation, but his results with respect to other variables suggest that it is important to distinguish different destinations when examining the probability of exit from unemployment.

As far as the transition to inactivity is concerned, rather more is known, particularly in the US, where a number of authors have attempted to distinguish the effect of unemployment compensation on transitions to inactivity from that on transitions to employment. In the US, Clark and Summers (1982) found the effect on both transitions to be insignificant. In contrast, Barron and Mellow (1981) found that the probability of leaving unemployment for both employment and for inactivity was lower for UI recipients.

Even within the employment destination it is important, as we have argued, to distinguish between different types of job. One distinction is that of regular versus marginal jobs. In theory the existence of unemployment insurance makes covered employment more attractive and may lead to a decline in the reservation wage. Workers in regular jobs have to contribute to unemployment insurance, but the actuarial return to these contributions may well exceed this cost (since the employer bears his fraction of the cost). The existence of UI may therefore provide an

incentive for workers to enter the regular employment and reduce the importance of the black economy.

The influence of unemployment compensation on whether the unemployed exit to regular or marginal employment is clearly hard to detect empirically, principally because of problems in defining in any given data set which post-unemployment jobs are "regular" and which are "marginal". One possibility might be to label all jobs held for less than a certain period as marginal but this would only pick-up one dimension of our definition and would moreover wrongly classify some jobs which were ex-ante regular.

A second classification of the outflows from unemployment to employment which we made in Section 1 was to distinguish unemployment ending in recall to the previous employer from that ending through entry to a new job. Katz and Meyer (1988) in the US and Jensen and Westergard-Nielsen (1989) in Denmark both attempt to isolate the separate effect of unemployment compensation on recall and new job exit probabilities using individual microdata. The former find the level of UI amongst claimants in Missouri to have no significant effect in a single-risk model but to have a significantly negative effect on the probability of finding a new job when allowance is made for the distinction between new job and recall. The authors do, however, counsel some caution when interpreting their results, pointing to the peculiar nature of the variation in the UI payments in their sample and to the fact that they find that UI has a significantly positive impact on the recall probability. Theory would suggest no (supply-side) impact at all if those persons who are recalled do not conduct job search. An insignificant effect of the replacement rate on the probability of leaving temporary layoff unemployment is indeed found by Topel (1983) using CPS data. Jensen and Westergard-Nielsen's results for Denmark display considerable variety, their model being estimated separately for men and women and for four different age groups. Although the replacement rate frequently has quite different effects on the probabilities of new job exit and recall, there is no systematic pattern to the estimated effects.

iv) Entry into unemployment

Unemployment compensation may affect entry into unemployment by a variety of means; for the moment we concentrate on the effects of the level of benefit and method of financing. The latter works via the demand side of the labour market while the former works through quit behaviour on the supply side. An upper bound on the effect via quits is given by the proportion of entrants to unemployment who leave their jobs voluntarily. Evidence suggests that in the the UK rather more persons quit than in the US but in neither country do such people form the majority of the unemployed (Johnson and Layard, 1986).

Outside the US, empirical evidence on the quantitative significance of the effect of unemployment compensation levels on the entry to unemployment is rather limited. Studies using time-series data on flows in the UK by Nickell (1982) and by Trivedi and Kapuscinski (1985) in Australia give qualitatively similar results. Both find significant effects of benefit levels on the outflows from unemployment but neither finds any strong evidence that benefits have much effect on inflows. Similarly, using the same micro-data as described earlier when considering inflows, Stern (1986) detects no effect of benefits on the probability that males in the UK re-enter unemployment within a given period of an earlier spell. These sorts of results where an analyst uses the same data-set to look at both inflows and outflows are clearly very useful given the difficulties of comparing different studies. All three studies just mentioned appear to suggest that benefits affect inflows into unemployment less than outflows.

At the same time, we need to recognise again that it is typically the total inflows from all labour market states that are being modelled, and not specifically the flow from employment to unemployment. The US literature on inflows, to which we have not yet referred, provides several examples of studies where the source of inflow has been distinguished, and gives a rather different picture of the effect of unemployment compensation. Hamermesh (1979) examines evidence for a sample of married women in the US and argues that there is a significant entitlement effect of UI encouraging entry into the labour force, although Clark and Summers (1979) suggest that for all workers the transition from not in the labour

force to unemployment is increased by UI at the expense of the transition from that state into employment.

In later work, Clark and Summers (1982) found significant positive effects of UI on transitions from employment and inactivity to unemployment and negative effects on transitions from employment to inactivity. The bulk of the effect found by Clark and Summers arose on account of the sub-sample who had entered unemployment through layoff, and considerable attention has been paid in the US to the incentives provided to employers and employees to negotiate contracts under which fluctuations in demand lead to unemployment (the theoretical literature was reviewed in section 2). Feldstein (1978) examines the probability that a person is on layoff unemployment in the US and concludes that around half of this unemployment is due to unemployment benefit. More recently, the different effects of unemployment compensation on temporary layoffs, permanent separations and quits has been studied in several papers by Topel (1983, 1984, 1985). In the last of these he uses a sample of over 75,000 observations on prime-age males pooled from five years of the CPS (1977-81) to consider the effect of both benefit levels and incomplete experience rating on transitions. The level of imputed UI is found to have no significant effect on quits (a result also reported by Marston, 1980), which Topel notes as probably reflecting the fact that benefit is withheld from most voluntary quitters in the US (see below). Controlling for personal characteristics, an individual's potential UI (as calculated by Topel) also appears to have little effect on the permanent layoff probability but there is a strongly significant effect on the probability of temporary layoff. Introducing a variable measuring the degree of government subsidy to layoffs (brought about by incomplete experience rating) in each individual's state, much of the effect of potential UI drops away but the subsidy measure is very important. Topel concludes that if the subsidy to layoff were to be eliminated through improved experience-rating, the unemployment rate in his sample would fall by a full one per cent point, this representing about a quarter of all the unemployment spells in the data.

The popular discussion of unemployment compensation and inflow of unemployment often supposes that workers find it financially attractive to quit employment in order to exploit their entitlement in a "benefit

holiday" of planned and certain duration. The US results indicate that UI may indeed have important effects on inflows but that the impact may be from the *demand* side and not the supply side of the market. As is observed by Burtless (1987), it is noteworthy that layoff unemployment is much more important in the US, where the implicit subsidy to temporary layoff unemployment is in fact less than in other OECD countries, where (apart from Sweden) there is little or no experience-rating of UI. According to Fitzroy and Hart (1985) this cannot be attributed to differences in labour law or institutions. Whatever the reason for the lower amount of temporary layoff unemployment in Europe, it may be that the kinds of concern voiced by Feldstein and Topel about the adverse effects of UI may be of lesser significance in other countries.

v) Other parameters of unemployment compensation systems

To this point, when looking at the supply-side of the market, we have only considered the effect of variation in levels of unemployment compensation. However, there is much more to the operation of a benefit system than the level of benefit, as we have emphasised. Governments may be able to manipulate the flows to and from unemployment by changing other parameters of the system.

The *duration of benefits* is one such parameter. Aggregate time-series data have been used by Bjorklund (1978) to try and assess the extensions of UI duration in Sweden in 1968 and 1974. No effect could be detected on the quarterly outflow rate from unemployment. Microdata have been used in the US by, amongst others, Katz and Meyer (1988a) who note a sharp rise in the outflow rate from unemployment spells of UI recipients recorded in the Michigan Panel Study of Income Dynamics data, about the time of UI exhaustion, this not occuring for non-recipients. Their econometric estimates, obtained with a sample of CWBH data suggest that an increase in potential UI duration of 1 week increases the mean length of time unemployed by up to 0.2 weeks. (A rather larger effect is found in Canada by Ham and Rea, 1987). Notably, Katz and Meyer conclude that changes in UI duration have greater efects than changes in UI levels, and their simulations show a given UI expenditure cut achieved via reducing the length of entitlement having twice the effect of one coming via a cut in

benefit levels. Interestingly, the results in Katz and Meyer (1988) and Ham and Rea (1987) suggest a similar effect of benefit period entitlement on both recall and new job probabilities. This is perhaps suprising since one would expect the mechanisms at work to be rather different.

The type of income support for the unemployed differs significantly between the US and Europe, the latter having more extensive assistance programmes for those exhausting insurance entitlement, as we noted in Section 2. This should make us wary when interpreting attempts to extrapolate findings of North American studies concerning the effect of the duration of benefit to Europe. Burtless (1987, p. 148) uses the results of Moffitt and Nicholson (1982) which imply a slightly smaller UI duration effect than that estimated by Katz and Meyer, to predict that the effect in Europe of the substantially longer UI entitlement in leading to longer duration of unemployment would be only 2½-4 weeks in Britain and West Germany, 3½-5 in Sweden and 5-7½ in France. These calculations assume that UI recipients in Europe would not take any account of any follow-on UA which may be claimed on the expiry of insurance benefits, hence increasing duration further. At the same time, it would clearly be wrong to assume that UA and UI provide such similar compensation that the effect of assistance follow-on is to indefinitely extend UI entitlement *de facto*. We have seen that in the case of two European countries with both assistance and insurance benefits - the UK and West Germany - the switch from UI to UA produces a significant reduction in total income in many cases. The distinction between insurance and assistance is an important one.

We have emphasised at various times the importance of recognising any effects on behaviour of the *administration of unemployment compensation*. Besides passing a contribution or an income test, a person claiming unemployment compensation has typically to satisfy various conditions concerning the circumstances of entry to unemployment and to search for new work. Voluntary quitting without good cause, failure to be available for work and the refusal of suitable job offers may all lead to a suspension or reduction of benefit payments or even complete disqualification. A tightening of administration of benefits may be an easier step than cutting their level for policy makers wishing to increase incentives. Selective measures affecting only the "less deserving" may be more politically

acceptable than across the board cuts in compensation affecting all the unemployed (Atkinson, 1988).

We have noted that a varying degree of severity of administration may result in different benefit level (or duration) elasticities across countries. Changes in administration over time may of course also affect transitions to and from unemployment with benefit levels held constant. It is useful to distinguish the treatment of an initial claim for benefit, which might be expected to affect especially the inflows to unemployment, and the ongoing monitoring of the claimant which will influence the outflow as well. As far as the latter is concerned, Burtless has argued that "compared with government employment services in Europe, the U.S. Employment Service is relatively ineffective in aiding and monitoring the search for jobs" (1987, p. 149). He singles out Sweden as an exemplum, saying that the compulsory notification of vacancies makes it quite simple for the state employment service to match job slots to the unemployed and thus to test availability for work. This will of course depend on the level of vacancies and the staffing levels in employment service offices. (In Section 2 we described the theoretical treatment of such a scheme by Pissarides, 1979).

Legislation concerning initial claims to UI toughened in much of the US during the late 1970s. Solon (1984) reports that by January 1983, fourty-four states disqualified those who quit voluntaily "without just cause" for the full period of their claim. That this legislation does not go unused is illustrated by the fact that in 1974, nearly 18 per cent of all UI claims ruled eligible on contribution grounds in California were disallowed because of voluntary quitting (Vickery, 1979). Pooling state-level data for 1978-80, Solon fails to find any effect on quit rates in manufacturing of changes in UI laws relating to the treatment of quits. Of course, benefit authorities may alter the severity with which they administer claims without any change in the law.

Our own analysis of administrative data in Britain shows that while 5 per cent of the male unemployed stock in 1974 had been disqualified from UI under voluntary quitting or industrial misconduct clauses, this proportion had fallen to 1 per cent in 1979 and 0.5 per cent in 1985. During this

period, the law relating to quitting and misconduct and the period of disqualification were unchanged (since 1985 the period of disqualification has been extended from 6 to 26 weeks). (The number of unemployed men rose several fold over the period, making the decline in absolute numbers disqualified less dramatic). Evidence of this type led Layard (1986) to argue that the administration of unemployment compensation in the UK had become much less severe and to suggest this as a contributory factor in the rise in unemployment since the late 1960s. (He also cited the separation in the 1970s of benefit payment offices from the employment service and the ending in the 1980s of the requirement of the unemployed to register with the latter). However, time-series on disqualifications are hard to interpret, a fall being entirely consistent with a decreased tendency to "malinger" as well as the alternative of a more relaxed administration. More seriously, there is the question of the direction of causation; increased leniency, particularly in the dealing with ongoing claims, could be a response to rising unemployment, rather than a cause of it. In other parts of unemployment compensation systems this reaction may actually be in-built, as is the case in the US where federal funding of an extended duration of UI benefit is triggered if the state unemployment rate exceeds a certain figure (a similar mechanism applies in Canada).

We need also to distinguish the changes in the number of actual disqualifications from changes in a credible threat of it occuring. This has certainly increased in recent years in the UK where a number of steps have been taken to tighten monitoring of benefit claims and job search (Atkinson and Micklewright, 1989). In France too, there has been increased surveillance of the long-term unemployed (OECD, 1987, p.131). Concrete evidence of the effect on transitions out of unemployment is provided for the UK by Royston (1983, 1984) who reports the results of an experiment in 1980 in which half of a sample of UI recipients who had been claiming for three months were subjected to review, including an interview. Expected post-review spell duration of the experimental group was reduced by an average of some 3.9 weeks compared to the control group.

In considering the implications of this kind of policy, the distinction between different types of exit is again important. The effect of claim monitoring may be to increase the transition rate out of registered

unemployment but not necessarily into employment. While some claimants may be stirred into increasing their search activity and hence their chances of re-employment, others may simply drop out of the labour force. The effect on transitions to employment may in particular be towards marginal jobs, these being the jobs where vacancies are typically more plentiful. For example, in April 1989 the Australian government announced that benefit claimants would be required to seek any casual or temporary work within their capacity. (Previously, a claimant could restrict his search to jobs within his usual occupation for 6 weeks). Similarly, the effect of regulations on quitting on inflows may be to reduce transitions into registered unemployment but some persons may still quit into unemployment more widely defined.

If the administration of benefit could be called the "stick" approach to encouraging transitions out of unemployment then the offering to the unemployed of a *financial bonus on securing employment* represents the "carrot". In Australia, this policy is now in place for the long-term unemployed, who since February 1989 have received A$100 on securing a job. Experimental evidence of the effect of re-employment bonuses comes from the US where there have been trials in several states. The Illinois experiment appears to have had substantial effects, the $500 bonus paid to new claimants obtaining a job within 11 weeks (and holding it for 4 months) having led to an average one week reduction in duration for the experimental group (the average including those who refused to participate and those who did not claim or qualify for the bonus) and a net saving in UI expenditure (Woodbury and Spiegelman, 1987). Meyer (1988) estimates the probability of re-employment for the control group to have been some 14 per cent higher during the qualifying 11 week period.

Re-employment bonuses are obviously intended to influence the outflow from unemployment to employment but their affect may be more widespread. Some of these effects are discussed by Meyer (1988) who considers the problems with a permanent bonus and concludes that the experiments did not show the desirability of a permanent programme. In a scheme, such as that in Illinois, where qualification for the bonus was immediate on entry to unemployment, the inflow to unemployment could be expected to increase. Firstly, workers intending to change jobs directly from one employer to

another would have an incentive to briefly register as unemployed in between jobs. Secondly, a bonus programme that pays people returning to their last employer would provide a strong encouragement to temporary layoffs. Where eligibility for a re-employment bonus is dependent on having been unemployed for a certain length of time, then this could be expected to have a negative effect on the re-employment probability during the qualifying period. In the case of the Australian programme where the bonus is modest and the qualifying period long, this effect may be rather slight. In the New Jersey experiment where the bonus was in excess of $1,500 and the qualifying period only seven weeks, a very strong disincentive could be expected.

vi) Participation of partners of the unemployed

The final effect of unemployment compensation which we review is that on the employment of the family of a person claiming benefits. Much has been written about the "added worker" effect that unemployment itself may have on family labour supply, but very little on the impact of the system of unemployment benefit. The effect of the benefit system on the behaviour of other family members depends on the design of the unemployment compensation scheme. If benefits are paid on a wholly individual basis, then there is purely an income effect on the decisions of others. If benefit receipt is means-tested on family income, as with UA, there may be substitution effects as well, with the net result being a strong disincentive effects on the labour supply of other family members, with a marginal tax rate of 100 per cent operating over a range of earnings. An intermediate situation is where part of the unemployment benefit - a spouse's addition - is conditional on the employment status of the spouse. In this latter situation, there is a notch in the budget constraint faced by the wife, and once this is passed the loss of benefit operates like a fixed cost of working.

Concern has been expressed about this disincentive aspect on account of the observed lower labour force participation of the wives of the unemployed. In the UK it has been noted that the participation rates of the wives of unemployed men are substantially lower than those of other married women (Smee and Stern, 1978 and Wood, 1982). Moreover, Dilnot and

Kell (1987) have pointed to the higher participation of wives where the husband is in receipt of unemployment insurance (where there is only the notch) than for those receiving the means-tested benefit (with 100 per cent marginal tax rate). In the United States, couples where the husband was unemployed (in March 1980) had a similar participation rate for the wife to that where the husband was employed, but the wives' unemployment rate was nearly four times as high (OECD, 1982, Table 9). In Canada, Ridgeway (1987) noted that the entry of married women into the labour force might have been expected to reduce the proportion of families with unemployment who had no one else in employment, whereas in fact this proportion remained virtually stable between 1975 and 1986.

There are of course a number of possible explanations for these patterns, including the fact that spouses face similar labour market conditions. Using different data sets for the UK, Garcia (1985, 1989) and Kell and Wright (1988) attempt to isolate the disincentive effect by estimating microeconometric models of labour supply for wives of unemployed men, taking into account the effect of family means-testing on the budget constraint. Garcia concludes that a reform which extended UI to unemployed men in receipt of means-tested UA would raise the overall participation rate of the wives in his sample of male unemployed by nearly 8 per cent points (1989, p.179). This represents a substantial impact, although Garcia notes that it implies that the disincentive effect of means-testing accounts for only a quarter of the shortfall in the participation rate of such women compared to that for all married women.

The results from the static models of Garcia and of Kell and Wright are important contributions in an area where little is known. At the same time, we need to recognise that the disincentive posed for a wife by her husband's UA receipt is not permanent, lasting only as long as he stays unemployed and continues to receive assistance. In choosing her labour supply, a married women may need to form an expectation as to how long her husband is likely to remain unemployed; if the labour market is slack she may not be able to easily re-enter employment at a later date if she quits work. The disincentive effect on wives' work may therefore vary with the state of the labour market and, to the extent that duration dependence in re-employment probabilities exists, with the length of time her husband has

been unemployed (Moylan el al, 1984, provide some descriptive evidence of labour supply changes from panel data that is suggestive of the latter).

CONCLUSIONS

Our aim in this paper has been to bring out the significance in the analysis of unemployment compensation of (a) distinguishing different labour market states and (b) treating the institutional features of different forms of benefit. The reasons why we believe them to be important in theoretical analysis have been summarised at the end of Section 2, where we concluded that, in general, too little attention had been paid to these aspects. Here we concentrate primarily on the empirical findings.

We began the paper with the assertion that we have to look beyond a simple employment/unemployment trade-off and that we need to consider dimensions of unemployment compensation other than the level of benefit payments. The importance of this wider view depends on how far transitions other than those between employment and unemployment are affected by benefits and on how far parameters other than benefit amounts influence transition probabilities in the labour market. In the latter case, we have drawn attention to the duration and time structure of unemployment insurance, to the administration of unemployment compensation, to the disqualification of the unemployed from benefit, to bonus payments for re-employment, and to the implications for labour supply decisions of the family means-test for unemployment assistance. Regarding the former, the findings on different transitions suggest that there are some grounds for believing that it is necessary to distinguish the different labour market states to which people move after they have been unemployed and the different states from which they enter unemployment. The evidence is however limited and, despite the large literature, we have found relatively little evidence concerning several potentially important effects of unemployment compensation on labour market transitions.

It should moreover be emphasised that the evidence we have assembled is drawn from a variety of OECD countries, with the United States numerically the best represented, and that it may be dangerous to extrapolate the findings from one country to another. To take a recent example, Katz and Meyer (1988a), after studying the impact of potential duration of unemployment insurance benefits in the United States, use the results to

draw conclusions about the difference in unemployment rates between the US and Europe. This fails to take account of the many differences between unemployment compensation systems on different sides of the Atlantic, to say nothing of the variation within Europe. We have for example emphasised the distinction between unemployment insurance and unemployment assistance, the differences in administration of benefit conditions, the relation with the public employment service, and other factors. In arguing for a richer view of both the labour market and of unemployment compensation, we have also been arguing for greater care in making international comparisons. Empirical evidence has to be sought in the context to which it is to be applied.

Unemployment benefit has not had a good press in recent years, with stress being placed on its negative effects on employment and labour market operation. Our review of the evidence leads us to conclude that there may be adverse effects on the incentive for the unemployed to leave unemployment but that these may be small and that there is little ground for believing that much voluntary quitting is induced by the unemployment insurance system (although there may be a significant impact on employer behaviour in countries where temporary layoffs are common). Moreover, the richer view of the relationship between unemployment compensation and the labour market that we have urged in this paper allows us to identify some of the ways in which it may have a positive, rather than a negative, impact. This applies particularly to unemployment insurance, as opposed to unemployment assistance. Unemployment insurance may have positive effects in encouraging labour force participation - the effect identified by Friedman in his Nobel Lecture - and favouring regular rather than marginal employment. Unemployment insurance, without an income test, does not involve high marginal tax rates on the earnings of other family members. These effects of unemployment compensation on labour market transitions should be taken into account in any overall judgment on the role of state provision of income maintenance for the unemployed, along with the contribution to distributional and stabilisation goals that we have not considered in this paper.

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